

What is claimed is:

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1. An imaging device comprising:  
a plurality of detectors for converting an  
electromagnetic radiation into electric signals;  
a plurality of read circuits, each connected to  
5 said detector and including a first regulated  
constant-current source for supplying a constant bias  
current to said detectors, and a second regulated  
constant-current source connected to said first  
regulated constant-current source, for correcting  
10 variations inherent in said detectors.

2. An imaging device according to claim 1,  
wherein said reading circuit further includes a third  
regulated constant-current source connected to said  
first regulated constant-current source, for canceling  
5 said constant bias current.

3. An imaging device according to claim 1,  
wherein said first regulated constant-current source  
comprises a bipolar transistor having an emitter  
connected to said detectors and a collector connected  
5 to said second regulated constant-current source.

4. An imaging device according to claim 1,  
wherein said first regulated constant-current source

comprises a field-effect transistor having a source connected to said detectors and a drain connected to  
5 said second regulated constant-current source.

5. An imaging device according to claim 1, wherein said second regulated constant-current source comprises a bipolar transistor and a resistor connected to an emitter of said bipolar transistor.

6. An imaging device according to claim 1, wherein said second regulated constant-current source comprises a field-effect transistor and a resistor connected to a source of said field-effect transistor.

7. An imaging device according to claim 5, wherein said resistor has a temperature coefficient which is the same as said detectors.

8. An imaging device according to claim 6, wherein said resistor has a temperature coefficient which is the same as said detectors.

9. An imaging device according to claim 1, wherein said second regulated constant-current source comprises a plurality of bipolar transistors and a plurality of resistors connected to emitters of said

- 5 bipolar transistors, each of said resistors having a resistance inversely proportional to an area of the emitter of one of said bipolar transistors.

10. An imaging device according to claim 1, wherein said second regulated constant-current source comprises a plurality of field-effect transistors and a plurality of resistors connected to sources of said
- 5 field-effect transistors, each of said resistors having a resistance inversely proportional to a gate length of one of said field-effect transistors.
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11. An imaging device according to claim 5, wherein said resistance ranges from 1 k $\Omega$  to 500 k $\Omega$ , and preferably from 5 k $\Omega$  to 100 k $\Omega$ .

12. An imaging device according to claim 6, wherein said resistance ranges from 1 k $\Omega$  to 500 k $\Omega$ , and preferably from 5 k $\Omega$  to 100 k $\Omega$ .

13. An imaging device according to claim 9, wherein said resistance ranges from 1 k $\Omega$  to 500 k $\Omega$ , and preferably from 5 k $\Omega$  to 100 k $\Omega$ .

14. An imaging device according to claim 10, wherein said resistance ranges from 1 k $\Omega$  to 500 k $\Omega$ ,

10 End  
and preferably from  $5\text{ k}\Omega$  to  $100\text{ k}\Omega$ .

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15. An imaging device according to claim 1, further comprising two data buffers for storing variation data inherent in said detectors.

16. An imaging device according to claim 1, further comprising means for comparing signals from pixels of the detectors with an upper limit of a dynamic range of the reading circuit.

17. An imaging device according to claim 1, further comprising means for comparing signals from pixels of the detectors with a lower limit of a dynamic range of the reading circuit.

18. An imaging device according to claim 16, further comprising means for generating variation data inherent in said detectors based on the result of the comparison.

19. An imaging device according to claim 17, further comprising means for generating variation data inherent in said detectors based on the result of the comparison.

20. An imaging device according to claim 16,  
further comprising means for manipulating an MSB of  
each of the variation data inherent in said detectors  
to determine a value of the MSB based on the result of  
the comparison, and successively manipulating bits of  
the variation data of said detectors to determine  
values of the bits up to an LSB thereof.

21. An imaging device according to claim 17,  
further comprising means for manipulating an MSB of  
each of the variation data inherent in said detectors  
to determine a value of the MSB based on the result of  
the comparison, and successively manipulating bits of  
the variation data of said detectors to determine  
values of the bits up to an LSB thereof.

22. An imaging device comprising:

a plurality of detectors arranged in a two-  
dimensional matrix, for converting electromagnetic  
radiation into electric signals;

a plurality for switching means, each associated  
with said detector, for selecting the associated  
detector;

a plurality of read-out circuits, each connected  
to said detectors in each column direction;

a plurality of regulated constant-current source,

each connected to said read-out circuit, for  
correcting variations inherent in said detectors;

15 a plurality of data buffers, each connected to  
said regulated constant-current source, for storing  
data for fixed-pattern-noise correction to be supplied  
to said regulated constant-current source;

a plurality of multiplexers, each associated with  
said read-out circuit, for selecting and outputting  
the output from the associated read circuit;

20 a vertical shift register for outputting vertical  
selection signals to successively turn on said  
switching means in the respective rows of the matrix;  
and

25 a horizontal shift register for outputting  
horizontal selection signals to successively select  
said multiplexers.

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